Future impacts of Chinese and Asian dependency upon energy from the Middle East and Central Asia

Umbach, Frank

Future Impacts of Chinese and Asian Dependency upon Energy from the Middle East and Central Asia

Frank Umbach

Senio Research Fellow and Head of the Asia-Pacific-Programme at the Research Institute of the German Council on Foreign Relations (DGAP) in Berlin, Germany

Introduction

"Energy security concerns have always been central to geopolitical interests. Throughout history, the effort to secure access to energy sources and ensure adequate transport routes has demanded technological, commercial, diplomatic and military agility."[1]

The terrorist attacks of 11 September 2001 on the World Trade Center and the Pentagon, the major role played by Saudi Arabian terrorists belonging to the Al Qaida network in these attacks, and subsequent military intervention in Afghanistan have focused international attention on Central/South Asia and the Middle East/Persian Gulf. Both regions are of crucial strategic importance for the stability of the world energy supply in the 21st century. At the same time, the political, economic, technological, climatic and demographic conditions for a "new world order" will increasingly change in the 21st century. One of the decisive issues for global political stability will be how to safeguard international energy supplies and create the necessary domestic, economic, ecological and security conditions for "sustainable development." The energy question could become one of the major environmental, economic and also security challenges of the 21st century, as the economic rise of Asia, and above all China, in the last fifteen years has created an enormous regional energy requirement that raises countless foreign and security policy issues for both regional and global stability.

In 1990 regional crude oil production in Asia accounted for around 48 % of the region's consumption, while 42 % of consumption had to be covered by imports from the Middle East. Due to dynamic economic growth in Asia and the fact that 50 % of the world's total population live in the region, the dependency of the Asia-Pacific states on crude oil imports rose to 58 % by 1998 and will

[1] Fereidum Fesharaki: Energy and the Asian Security Nexus. In: Journal of International Affairs, Autumn 1999, pp. 85–99.

probably rise to 68 % by 2010. Already in 1998, 90 % of the region's imports of crude oil came from the Middle East (see table 2). In 2010, Asia will probably account for a good 55 % of the global increase in energy demand, while at the same time, the percentage of oil in the global energy mix will decline from around 40 % at present.[2] Against this background, Asia's dependence upon oil imports from the Middle East and the Persian Gulf region in terms of its total imports of crude oil will remain at 90 % up to the year 2010, while the dependence of the USA on oil imports from the potentially unstable Gulf region has probably fallen to below five % (EU-15 in 1999: 31 %).[3] The energy demand of the People's Republic of China as the world's most populous country, in particular, will have a long-term influence on regional and global energy supplies as well as manifold effects upon Beijing's foreign and security policy, regional stability in Northeast, South and Central Asia and Beijing's relations with the USA and Europe.[4] The following analysis will first of all deal with the energy challenges facing China and the Asia-Pacific region in the medium-term up to 2010–2020, and then analyse the ambivalent impact on foreign and security policies in a regional and global context.

China's Energy Policy Uncertainties

Since 1990, China has been a net importer of energy and in November 1993 also became a net importer of crude oil. China's current and future energy situation is defined by the following structural problems and challenges:

---

2 See Issam Al-Chalabi: Market Myths and Political Realities. In: John Calabrese (Ed.): Gulf-Asia Energy Security. Middle East Institute, Washington D.C. 1998, pp. 71–76.

3 Fereidum Fesharaki: ibid.

4 See also other articles by the author.– Frank Umbach: Geostrategische und geoökonomische Aspekte der chinesischen Sicherheits- und Rüstungspolitik im 21. Jahrhundert – Die Verknüpfung traditioneller Sicherheitspolitik mit Ressourcenfragen im geopolitischen Denken Chinas. In: Gunter Schubert (Ed.): China: Konturen einer Übergangsgesellschaft auf dem Weg in das 21. Jahrhundert. Mitteilungen des Instituts für Asienkunde No. 344, Hamburg 2001, pp. 341–404; by the same author.: China's Energy Insecurity and the Implications for its Foreign and Security Policies vis-à-vis Central Asia. In: Energy Security and Regional Instability, Joint DGAP/Harvard Working Papers (ed. by Brenda Shaffer and Frank Umbach), 30 p. (being prepared): Konflikt oder Kooperation in Asien-Pazifik? Chinas Einbindung in regionale Sicherheitsstrukturen und die Auswirkungen auf Europa. München 2002,here p. 330 ff. and: Die Energiepolitik Chinas. In: Internationale Politik, January 2001, pp. 43–48. See also Robert A. Manning: The Asian Energy Factor: Myths and Dilemmas of Energy, Security and the Pacific Future. New York 2000; IEA: China's Worldwide Quest for Energy Security. Paris 2000 and Erica Strecker Downs: China's Quest for Energy Security. MR-1244-AF. RAND-Corporation, Santa Monica 2000.

- A rapid increase in energy consumption in the next decades;
- Small oil and gas deposits in China and in the immediate geographic vicinity, resulting in a huge import requirement for these two fossil fuels, especially from the Persian Gulf. This in turn has numerous foreign and security policy consequences for China and the international community;
- The simultaneous increase in the energy requirement of almost all other East, Southeast and South Asian states, which could lead to energy and political rivalry – in particular with Japan, India and the USA – over access to the few regional oil and gas resources in the South China Sea and those in the Persian Gulf and in Central Asia, but also Africa and Latin America;
- Due to its disastrous environmental impact on the population, nature and the economy, China's strong dependency upon coal will have to be reduced in future;
- The need for a diversification of energy sources, transport routes and production sites (especially abroad) due to global economic trends (globalisation, cost efficiency etc.) and security policy factors; and
- A lack of experience in participation in global economic processes characterised by mutual dependency and an international division of labour that contrast with China's historic "strategic security culture", and its preference for economic autarky and bilateral relations. Yet at the same time, the institutional interdependence of geo-economic and geo-political interests plays a central role in China's foreign and security policy, as the state-owned energy companies are still part of the network of defence institutions in the Beijing power apparatus.

Table 1: Energy Sources in China and the Asia-Pacific Region

	Coal	**Oil**	**Gas**	**Nuclear Power**	**Hydro-electric Power**
Global share (in %)	20	40	29	8	3
Asia-Pacific's share (in %)	45	39	9	5	2
China's share (in %)	75	20	2	1	2

Sources: Empirical data taken from Ji Guoxing: China Versus Asian Pacific Energy Security. In: The Korean Journal of Defense Analysis, Winter 1998–1999, p. 109–41 (120) and Swaran Singh: China’s Energy Policy for the 21st Century. In: Strategic Analysis, March 1999, pp. 1871–1885 (1873).

China's rapidly increasing demand for energy is not due solely to population growth, but above all, to the accelerated pace of agricultural electrification, urbanisation and rapidly increasing consumption (refrigerators, washing machines, televisions, air-conditioning etc.) as well as the development of the transport and industrial sectors. This imbalance between demand caused by economic and population growth and domestic energy production is increasing slightly, so that in 2000 China was only able to cover 70 % of its total energy requirement from its own reserves.

Oil

China currently consumes more than four million barrels of oil a day (b/d), or the equivalent of around 20 % of total Asian oil consumption and 5.5 % of global consumption. Although more than 90 % of current Chinese oil is produced on the mainland, higher increases are recorded in the East and South China Sea. But even if offshore production in China rises to 73 million barrels over the next few years as China hopes, it was apparent early on that this would not be able to compensate for even faster growth in the demand for oil and other sources of primary energy. Earlier optimistic estimates of larger oil deposits in the South China Sea have not been fulfilled. As late as 1989, China conjectured that there were 130 billion barrels of crude oil in the South China Sea, while international estimates varied from between six and 105 billion barrels. However, currently proven reserves amount to only 7.5 billion barrels, even though a number of larger deposits have been found over the last three years due to the involvement of Western energy companies with their advanced technology.[5] Although since the early 1980's, foreign oil companies have invested over U.S.$ five billion in offshore projects in the South China Sea together China, the current daily production volume of 340,000 barrels of crude oil does not meet even one % of the national daily oil requirement.[6] Overall, China has only 2.43 % of global crude oil reserves and 1.2 % of the world's reserves of natural gas, as early hopes of large deposits of oil in the Tarim Basin (Sinkiang) have so far proved illusory. Instead of the thirteen to 29 million tons originally hoped for, only 230 million tons have been proven so far. While domestic oil production has risen by only 1.67 % during the last ten years, consumption of crude oil rose by 5.77 % a year over the same period.[7] Chinese oil production is unlikely to exceed 160 to 170 million tons a year over the next few years.[8] On the contrary, analysts expect a stagnation or even decline in crude oil production on the mainland, as most of the larger oil fields that are currently being exploited are likely to be exhausted

---

5 See Amy Myers Jaffe/Steven W. Lewis: Beijing’s Oil Diplomacy. In: Survival, Spring 2002, pp. 115–134 (120).

6 See Fereidun Fesharaki: Energy and Asian Security Nexus. p. 92.

7 See also" China's Quest for Energy Independence,” Stratfor.Com, 24.5.2002, p. 1.

8 See the chapter "Energy" in: FEER: Asia 2001 Yearbook. A Review of the Events of 2000. Hong Kong, December 2000, pp. 48–49 (48).

within the next five years if current production quotas are maintained.[9] At the same time, however, oil reserves in the entire Asia-Pacific region are very limited, amounting to only five % of global deposits. In autumn 2001 Chinese experts are supposed to have found larger deposits of natural gas and oil in Tibet, officially put at four to 5.4 billion tons (or 28–37.8 billion barrels).[10] However, more detailed geological studies of the true extent of the newly discovered fossil resources still have to be carried out, as Beijing has repeatedly exaggerated such discoveries in the past in order to persuade Western energy companies to make larger investments.[11]

Given these circumstances, China in 2010, with a population of 1.42 billion, will probably have to import around 35 to 40 % of its energy consumption (currently around 20 %) in the form of raw fossil fuels. At the same time, imports of crude oil would rise from 35 million tons (1997) to between 100 and 142 million tons in 2010.[12] It is estimated that China's consumption of crude oil will increase by between 750,000 and 3 million barrels a day a year by 2010, amounting then to a total of 5.4 to 7.6 million barrels a day. Taking into account continued high rates of economic growth, it could then reach between seven and twelve million barrels a day in 2020.[13]

China has already overtaken Germany as the fourth largest oil consumer in the world and has become the second largest energy user after the USA, while being only the third largest energy producer. If present trends continue on a straight line, China's consumption of primary energy sources, crude oil consumption and oil imports could even surpass that of the USA in less than 30 years. In order to reduce dependency and vulnerability to possible crisis scenarios in the oil producing states in the Middle East and Persian Gulf, China wants to stockpile around six million tons of crude oil as a strategic reserve by the year 2005.[14] This reserve, however, would suffice China's oil refineries and petrochemicals industry for less than three days (compared to 90 days in the USA and 60 days in Japan).[15]

---

9 See Chien Chung: China’s Energy Strategy in the 21st Century. Peace Forum Essays, Taipei 2001 <www.dsis.org.tw/peaceforum/p_2e.htm#7>.

10 For a comparison: the largest oil field in the world *Ghawar* in Saudi Arabia comprises 70–85 billion barrels of crude oil. The Kazakh oil field *Kashagan*, another mega oil field, contains around 10–30 billion barrels of crude oil.

11 Compare: Potentially Massive Oil and Gas Find in China. Stratfor.Com, 5.9.2001 and: China Finds Oil in Tibet. BBC-News, 21.8.2001 (Internet Version).

12 See the chapter "Energy". In: FEER: Asia 2000 Yearbook. A Review of the Events of 1999. Hong Kong, December 1999, pp. 48–49 (49) and Yang Guang: China’s Stabilizing Role. In: John Calabrese (Ed.): Gulf-Asia Energy Security, pp. 39–46 (41). In 2000 the IEA even assumed an import requirement of 200 million tons of crude oil in the year 2010.

13 See Amy Myers Jaffe/Steven W. Lewis: Beijing’s Oil Diplomacy, p. 118.

14 Compare the chapter. "Energy." In: FEER: Asia 2002 Yearbook. A Review of the Events of 2001. Hong Kong, December 2001, pp. 43–44 (44).

15 See Chien Chung: China’s Energy Strategy in the 21st Century, p. 1.

Natural Gas

Slightly larger deposits of natural gas have been found both in China and the entire Asia-Pacific region. However, the costs of constructing pipelines and liquefying plants are huge due to the long transport routes. Nevertheless, and also for environmental reasons, China has made increasing the use of natural gas a high priority, despite the massive investment costs.[16] So far, however, despite annual growth rates of 18 %, consumption of natural gas in the entire Asia-Pacific region remains far below the OECD average of 26 %, at only ten %.[17]

Nonetheless, China's gas consumption is believed to increase almost fivehold until 2030 (from 32 billion cubic meters in 2000 to 61 bcm in 2010 and 162 bcm in 2030). The Chinese government hopes that gas will cover already eight to ten % of the country's entire energy consumption by 2010, whereas the IEA has forecasted that it will remain small even in 2030 with seven %.

Coal and Alternative Sources of Energy

Although China possesses the third largest coal reserves in the world (after the USA and Russia), it will have to import greater quantities of foreign coal in future, as the inadequate road network, particularly in the interior of the country, poses insurmountable transport problems. As a result, it is sometimes more expensive to transport domestic coal production than it is to import from abroad. Moreover, in Beijing's view, further increases in coal production have to be limited as the environment in China is already suffering from excessive pollution levels that increasingly threaten economic growth. At the same time, after the U.S.A, China is the largest producer of greenhouse gases and CO_2-emissions that are held responsible for global warming. Even in 1997 China was the largest producer of SO_2 emissions, surpassing both Europe and the U.S.A, with an output of 23.46 million tons.[18] The main reason for this is the usually high sulphur content of the coal that is responsible for 75 % of SO_2 emissions, 70 % of smoke and smog and 85 % of all CO_2 emissions in China.[19] But in addition to this, 33 % of all sulphur dioxide rainfall in South Korea and even 50 % of the sulphur emissions said to be the cause of acid rain in Japan supposedly originate

16 See Amy Myers Jaffe/Steven W. Lewis: Beijing's Oil Diplomacy, p. 121 f.

17 See Robert A. Manning: The Asian Energy Predicament. In: Survival, Spring 2000, pp. 73–88 (79).

18 See Gao Shixian: China. In: Paul B. Stares (Ed.): Rethinking Energy Security in East Asia. Tokyo-New York 2000, pp. 43–58 (52).

19 See Yang Guang: China's Stabilizing Role, p. 40.

in China.[20] If current trends continue, China and India are together expected to account for 75 % of all global CO_2 emissions in 2020. According to calculations of the World Bank, these environmental problems, in particular air and water pollution in China, cost no less than three to eight % of the country's gross domestic product,[21] which in the 1990s would have been more than U.S.$ 30 billion a year.[22]

China's coal reserves can therefore only play a greater role if clean and cost-efficient incineration technologies find widespread use. However, as financial resources are inadequate for this, the Chinese leadership is increasingly relying on other sources of energy. At the same time, however, environmental constraints are increasingly limiting the expansion of alternative sources of energy such as hydroelectric power, as demonstrated by resistance to gigantic construction projects (Three Gorges Project). Although demand for natural gas should rise by eight % a year, in the medium term up to 2020 it will only account for a maximum eleven % of China's total energy consumption. The share of civilian nuclear power as a percentage of China's total energy consumption will – despite the long-term increase in the number of nuclear reactors from six at present to sixteen in 2025 – only rise from 1.5 % in the mid-1990s to no more than four to six % in 2020.[23]

At the same time, the share of coal as a percentage of total energy consumption will decline (but not below 60 % in 2020), although its production volume will continue to increase. Global coal consumption is expected to increase by around two billion tons from 1996 to 2020, 85 % of which will be attributable to China and India. While China currently meets around 67 % of its energy requirement with coal, the figure for India is 60 % and for the entire Asia region 46 % (oil: 38 %; natural gas: 8 %). This also explains why the entire Asia region – which according to these figures meets 84 % of its energy requirement with coal and oil – is already the region with the highest CO_2 emissions, although per capita energy consumption in Asia has so far constituted only half the global average. However, China's per capita energy consumption of oil is now almost twice as high as India's (in the case of electricity, Chinese per capita consumption amounts to 8 % of the OECD average, while in India it is only 3

---

[20] See Shaun Breslin: The China Challenge? Development, Environment, and National Security. In: Security Dialogue 4/1997, pp. 497–508 (499). See also Gregory D. Foster: China’s Environmental Threat: Crafting a Strategic Response. In: Comparative Strategy 2000, pp. 123–143.

[21] See David Shambaugh in: IHT, 1.10.1999, p. 10.

[22] See Gregory D. Foster: China’s Environmental Threat, p. 123.

[23] So far China only operates two reactors — the nuclear power plant *Dayawan* in *Guandong* province and one in *Qinshan Zhejiang* —, while three others are under construction. The sixth nuclear power plant has been under construction since January 2002 – see: China Daily, 7.1.2002 (Internet Version).

%). For environmental reasons and reasons of economic efficiency, larger quantities of cheaper coal with a far lower sulphur content than domestic production could be imported from Indonesia and Australia in future. China also plans to build several large liquefying plants to convert Chinese coal into oil products in order to reduce crude oil imports. However, given the current price of crude oil, such plants are still relatively expensive.

In the long-term, the State Development Planning Commission plans to reduce the percentage of coal production for the national energy requirement to 35 %, while oil and gas should account for 50 %, with hydroelectric power, nuclear energy and other alternative sources of energy making up the remaining 20 %.[24] China also wants to increase the use of windpower, whereby the regions Sinkiang and Inner Mongolia offer the best perspectives. This is a long overdue development as windpower has so far only met one % of the national energy requirement and China lags far behind other newly industrialised countries – such as India – in this area.[25] Moreover, wind and solar power as an integral component of a decentralised energy supply offer the most economic solution to energy problems in isolated regions of China, where large power plants and power grids are not economically feasible. For that reason, at least 10 million Chinese have to do without electricity. By 2010, 20 million inhabitants of isolated regions should be decentrally supplied with wind and solar power, significantly improving their educational opportunities and chances of economic development.[26]

The Dimensions of the Regional Energy Policy Challenge in the Asia-Pacific Region

At the same time – it is not only China's energy requirement that has increased, regional demand has increased throughout the entire Asia-Pacific region. While global energy demand rose by 63 % between 1970 and 1994, the regional energy demand in Asia rose by 274 % in the same period.[27] Between 1986 and 1996 it rose by 60 % in Asia, while between 1990 and 1996 the annual crude oil requirement in the region rose by an average of 5.3, or by six million barrels a day between 1990 and 1997. That in turn, accounted for 82 % of the increase in the global demand for oil.[28] At the same time, in the decade from 1983 to 1993, the four Asian economies Japan, China, Taiwan and South Korea accounted for no less than 36 % of the global increase in demand for primary energy.[29] While

---

24 See the chapter: "Energy". In: FEER: Asia 2001 Yearbook, p. 49.

25 See "Changes in the Wind?", Stratfor.Com, 4.1.2001.

26 See Klaus Sieg: Der Tagesspiegel, 12.6.2002, p. B. 2.

27 See Robert A. Manning: The Asian Energy Predicament, p. 76.

28 See Fereidun Fesharaki: Energy and Asian Security Nexus, p. 88.

29 See Keiun-Wook Paik: Gas and Oil in Northeast Asia. London 1995, pp. 3–5.

in 1992, Japanese oil imports still accounted for 77 % of total Asian oil imports, by 2010 this figure will probably have dropped to 37 % as a result of the far greater increase in China, India and the other Asian states. While Indonesia, Malaysia, Brunei and Vietnam are still currently net exporters of oil, some of these states are likely to become net importers in 2010.[30] In comparison: In 2001,, the United States consumed 19.6 million b/d of oil with an import of 54% (up from 42% in 1990). Whilst 22-24% of the U.S. imported oil comes from the Middle East, in terms of total oil consumption the Middle East accounts for just fourteen to fifteen % in the United States.

Table 2: The Oil Dependence of the Asia-Pacific Region in the Period 1997-2005

Dependence of the Asia-Pacific Region on Oil Imports (1997-2005)				
	1997	1998	2000	2005
Oil demand (in 1000 b/d)	19.251	18.739	19.848	23.596
Oil production (in 1000 b/d)	7.595	7.781	8.333	7.971
Net imports (in 1000 b/d)	11.656	10.958	11.515	15.625
Oil dependency	61 %	58 %	58 %	66 %
Oil imports from the Middle East as a percentage of total oil imports	90 %	90 %	88 %	88 %

Source: Fereidun Fesharaki: Energy and the Asian Security Nexus. In: Journal of International Affairs, autumn 1999, No. 1, p. 85–99 (97).

This is also having an impact at the international level. In 1998 Asia's percentage of the world energy requirement had risen to around 26 %, up from around eighteen % in 1984. Compared to this, regional production volume in Asia accounted for only eleven % of global production of crude oil in 1998.[31] No other region of the world has recorded an increase on this scale in the last 20 years. But as well as China, India that has the second largest population in the world, is also a driving force behind the rising demand for energy. By 2010 energy consumption will therefore probably rise by an average of 4.6 % and demand for crude oil by as much as ten % a year from 35 million tons per annum (in 1998). At the same time, it will not be possible to significantly alter the percentage of

[30] See Robert A. Manning: The Asian Energy Predicament, p. 78.

[31] See Fereidun Fesharaki: Energy and Asian Security Nexus, p. 89.

hydroelectric power (8.9 %), natural gas (8.2 %) and nuclear energy (two %) in the national energy mix by this date.[32]

The situation is slightly more favourable with regard to natural gas. The Asia-Pacific region has over 6.4 % of global gas reserves, but accounts for about ten % of global gas consumption. Natural gas consumption in the Asia-Pacific region has not therefore kept pace with regional gas demand, so that in the 1990s, the Asia-Pacific region had to import increasing amounts of liquid gas from the Middle East and the Persian Gulf in addition to oil. Only in the case of coal, is there a balance between demand and production and regional reserves. Thus, the Asia-Pacific states possess over one third of the world's coal reserves, while production and coal consumption account for some 45 % of global levels. For that reason, demand for oil and the security of oil imports pose the biggest challenges for regional energy security in Asia.

In the medium and long-term, the Asian economic crisis that started in summer 1997 has had no significant impact on either regional or global oil consumption and has not therefore significantly reversed the long-term energy trends. Although the 1997-1998 crisis slowed down the growth in energy demand in 1999, (which in the case of crude oil amounted to 500,000 barrels a day or 2.7 %, after average growth rates in the previous two decades of around 5.5[33]), regional demand for crude oil once again rose by 4.5 % or more than 500,000 barrels a day, while the figure for 2000 was 3.6 %.[34] This is largely because the economies of the People's Republic of China and India were hardly affected by the economic and political consequences of the Asian crisis. China's oil requirement in the year 2000 rose by 6.3 %,[35] and in 2001 still amounted to 4.4 %, as the global economic downturn affected China's demand for oil.[36] Nevertheless, both the regional growth rates of oil consumption in the Asia-Pacific region as well as those of China were significantly higher than the forecast increase in global demand for oil of 1.5 to two %.[37]

Even if forecasts for future regional oil requirements are based on assumptions of lower economic growth until 2010, Asian consumption of crude oil could still rise to a total of 15.6 to 21.5 million barrels a day. This would be a

---

32 See Sujit Dutta: Indo-Gulf Relations: Dimensions of Security. In: John Calabrese (Ed.): Gulf-Asia Energy Security, pp. 47–51 (47 f.).

33 See R.A. Manning: The Asian Energy Predicament, p. 75.

34 See ibid and the chapter ‘Energy’. In: FEER: Asia 2001 Yearbook. A Review of the Events of 2000. Hong Kong, December 2000, pp. 48–49 (48) and Robert A. Manning: The Asian Energy Predicament, p. 75 f.

35 See the chapter ‘Energy’. In: FEER: Asia 2001, p. 48.

36 See FAZ, 14.7.2001, p. 21 and IHT, 14–15.7.2001, p. 9.

37 See Katsuhiko Suetsugu: Energy Markets and Power Politics. In: John Calabrese (Ed.): Gulf-Asia Energy Security, pp. 53–60 (53).

daily increase of eight to fourteen million barrels a day in the specified period.[38] Only if the People's Republic of China were to suffer a large-scale economic collapse, leading to a significantly lower increase in energy demand, would the result be a major reduction in regional demand for energy in the Asia-Pacific region. Even if economic growth were to fall to one % over the next three years, the daily demand in 2010 would still be nine million barrels a day higher than in 1996. In this case, the increase alone would be greater than the total current production of Saudi Arabia! The reason for scepticism about any major slowdown in the consumption of primary energy in the Asia-Pacific region is found in the still low level of per capita consumption, especially in China, of only 5 barrels (as opposed to 15 barrels in Taiwan, 32 barrels in Germany and 53 barrels in the USA – figures for 1994). Per capita consumption of electricity in China currently amounts to only eight % (in India only 3 %) of the OECD average.[39]

The gap between a rapidly rising demand for energy and limited own energy reserves will therefore become larger and can only be filled by a sharp increase in energy imports. No matter what form the solution to questions of energy security in East and South Asia takes, it cannot ignore the energy policy dimension of China. Current Chinese energy consumption already accounts for 64 % of the total energy requirement of the Asia-Pacific region, and with the current GDP growth rate of seven to eight %, this figure will continue to rise.

Against this background, it will be of utmost importance whether China's new leadership will follow a "*strategic strategy*" (determined not just by economic, but also by foreign, security and geopolitical factors) or "*market strategies*" to solve its energy insecurities and supply security.

The Geo-Political Impact of Chinese and Asian Energy Demand on China's Foreign and Security Policy and Regional and Global Political Stability

"The new realities' of the world oil market suggest that the issue of security of oil supplies is no longer exclusively a strategic concern of the West. Asia's stake in securing reliable oil supplies is even greater because of the relative increase in its degree of dependence on oil from the Gulf."[40]

Against this background of a rapidly growing demand for energy and deteriorating prospects for major new energy discoveries in their own country,

---

[38] Fadhil Chalabi: Gulf-Asia-Energy Interdependence. In: John Calabrese (Ed.): Gulf-Asia Energy Security, pp. 13–21 (16).

[39] Private purchases of cars in Thailand for example rose by 18 % annually between 1985–1992.See also Robert A. Manning: The Asian Energy Predicament, here p. 77 f.

[40] Fadhil Chalabi: Gulf-Asia-Energy Interdependence. p. 20.

the Chinese political leadership and managerial elite has been keeping a greater look out for new energy resources abroad since 1996/97. As early as 1990, China purchased 81.5 % of its crude oil from only three foreign states, although only Indonesia exported more than a million tons of crude oil to China. In 1997 the number of countries exporting more than two million tons of crude oil to China had doubled compared to the three in 1990: Indonesia, Oman, Yemen, Angola, Iran and Vietnam. Even in 1997, China imported oil from all Gulf States except Bahrain.[41]

Since early 1997 it has even been possible to observe a policy of demonstrative activity with regard to the securing of new sources of energy. In 1997 alone, the Chinese National Petroleum Corporation (CNPC) completed no less than eighteen international petroleum and petrochemical projects with a contract value of around U.S.$ 750 million. These included the purchase of foreign oil companies (or the acquisition of major stakes in the companies), pipeline projects (in Turkmenistan and Thailand) or the construction of refineries and depots abroad. In addition, the People's Republic is also participating in the development of oil fields in Russia, Pakistan, Kazakhstan, Indonesia, Egypt, Ecuador, Venezuela, Argentina, Iran and Sudan. In this way, China has paid around U.S.$ 8.2 billion since May 1997 for oil licences in Sudan, Venezuela, Iraq and in Kazakhstan. In that year, Beijing's total commitments amounted to U.S.$ 20.7 billion, if the costs of the pipeline in Central Asia are included. At the same time, negotiations were conducted for other oil licences in Iran, Indonesia, Russia and Turkmenistan, while Beijing signed joint venture agreements with Italy and India. Furthermore, China increased the number of its licences in Iraq and Sudan and also acquired interests in Venezuela.[42] At present, China controls over 2.72 billion barrels of oil reserves outside its own territory by means of take-overs and international alliances.[43]

The predicted increase in global oil production, the increasing market orientation of national energy policy including privatisation and the deregulation of national energy policy, more efficient use of energy and energy saving measures, could in principle, overcome the massive increase in oil consumption in China and East Asia, even though many international energy experts fear significant price increases after 2010. The issue of energy security, however, depends not least of all, on the policies of the states concerned and the choice of national strategies for energy security. This is especially true of the Asia-Pacific region, where 60 to 70 % of all crude oil imports are still arranged by contracts with state-owned or semi-state controlled international Asian companies, that are

---

41 See Yang Guang: China’s Stabilizing Role, p. 41 f.

42 See Amy Myers Jaffe/Steven W. Lewis: Beijing’s Oil Diplomacy, p. 122 ff.

43 See: China’s Quest for Energy Independence, p. 2 f. and David Lague: The Quest for Energy to Grow, p. 4.

not only determined by economic factors, but also by strategic aspects of the foreign and security policy of the individual country.[44] Given the new energy policy dependencies in the early 1990s Chinese foreign and security policy had to deal with regions and countries that until then had played either no or only a secondary role in its traditional foreign policy. For that reason, the possibility of greater economic and political rivalry, in particular with Japan, India, the USA and, in the medium and long-term with Russia in Central Asia, for shrinking global oil reserves cannot be principally excluded. Consequently, Chinese energy experts are frequently more sceptical about global energy reserves and do not even rule out a serious shortage of oil reserves in the next 20 years. For that reason, they frequently arrive at much more alarming analyses than Western experts.

Against this background, the Persian Gulf region has become steadily more important not only for the energy policies of China and the other Asian states, but also for their national foreign and security policies. The increasingly global orientation of Chinese foreign and security policy toward the Persian Gulf, Africa and even Latin America since the mid 1990s cannot be explained solely by China's increasing economic importance, prestige and its desire for great power status; to a considerable degree it is the result of the direct effects and consequences of China's energy requirements and rapidly increasing imports of oil and gas from countries outside the Asia-Pacific region. Europe in particular, has so far failed to heed and analyse these economic and political interdependencies and their geo-political implications for China's foreign and security policies, although they raise numerous challenges not only for the USA but also for Europe, that will influence economic and political stability.

Persian Gulf /Middle East: The Two-Edged Sword of Political and Economic Interdependencies

Even today over 60 % of all oil exports from the Persian Gulf go to Asia, while Asia imports between 59 and 87 % of its oil from the Persian Gulf/Middle East. Asian dependence upon these sources will rise to 90 to 95 % in 2020.[45] While at the end of the 1980's, three million barrels of crude oil a day were imported from the Persian Gulf, in 1998 this import quota had already tripled to nine million barrels a day, and by 2005 could rise to 15.5 million and in 2010 to 17 to 18.8

---

[44] See Katsuhiko Suetsugu: Energy Markets and Power Politics, p. 55.

[45] Ibid, p. 80. For the background see also Jonathan Rynhold: China’s Cautious New Pragmatism in the Middle East. In: Survival 3 (Autumn) 1996, pp. 102–116 and Geoffrey Kemp: The Persian Gulf Remains the Strategic Prize, and by the same author: Energy Superbowl. Strategic Politics and the Persian Gulf and Caspian Basin. Washington D.C. 1997.

million barrels a day.[46] Assuming a price of U.S.$ 20 a barrel, this would produce a capital transfer of at least U.S.$ 124 billion from Asia to the Middle East.[47] As the 1990s demonstrated, this money could be used for economic investments and large-scale arms imports. The increasing strategic rivalry between the People's Republic of China and India could lead to a rapidly escalating arms race between these two countries, in particular between their naval and air forces, due to heightened competition for energy resources and strategic access to the Persian Gulf through the Indian Ocean as a consequence of unilateral strategies to ensure reliable energy supplies.[48] These strategies tend to rely on strenuous efforts to achieve autarky and primarily military concepts of safeguarding energy supplies, instead of market economic concepts, globalisation requirements and an international division of labour and transnational energy co-operations organised by the private sector. Like China, India also expanded its cooperation with the Gulf states in the 1990s both in terms of military policy and technology. The fact that 2.5 to three million Indian workers, technicians, engineers and managers work in the Gulf states explains India's strong interest in questions of regional security and stability in the Gulf region and the Middle East as well as Central Asia. At the same time, however, it strengthens India's anyway marked distrust of more extensive Chinese ambitions in the region.[49]

In contrast, U.S. imports of oil from the Middle East and the Persian Gulf will continue to shrink in the next decade. This is true both with regard to volume as well as in percentage terms. It is worth noting that oil exports from the Persian Gulf to Europe are already greater than to the USA. These will probably fall from around ten % at present to around two % in the period from 1996 to 2010 (see table 3).

Even if the percentage of crude oil supplied by the Atlantic basin (above all West Africa) to Asia and China has risen from 300,000 barrels a day in 1995 to 700,000 in 1996 and 800,000 in 1998, and will probably even rise to 1.2 million barrels in 2005, the share of total imports from this area by the Asia-Pacific region will continue to play only a minor role due to the long transport routes (those from Latin America or the West African coast).[50]

---

46 See Fereidun Fesharaki: Energy and Asian Security Nexus, p. 90 f.

47 See Robert A.Manning: The Asian Energy Predicament, p. 81.

48 U.S. energy expert Kent Calder, in particular, has drawn attention to these dangers. See his studies: Energy Forum. In: The Washington Quarterly, Autumn 1996, pp 91–95 and: Asia’s Deadly Triangle. How Arms, Energy and Growth Threaten to Destabilize Asia-Pacific. London-Sonoma 1997. See also Frank Umbach: Konflikt oder Kooperation in Asien-Pazifik, Chapters 3 and 9.

49 Sujit Dutta: Indo-Gulf Relations: Dimensions of Security, p. 49.

50 See Fereidun Fesharaki: Energy and Asian Security Nexus, p. 93.

Table 3: Persian Gulf Oil Balance and Destination of Exports 1996 to 2010 (million b/d)

Production and Destinations	**1996**	**2000**	**2005**	**2010**
Producers				
Iran	3.8	3.6	4.5	4.6
Iraq	0.6	2.0	4.3	5.5
Saudi Arabia	8.9	9.4	10.3	11.4
Kuwait	2.2	2.7	3.0	3.3
United Arab Emirates	2.5	3.0	3.0	3.5
Oman	0.9	0.9	0.9	1.2
Qatar	0.6	0.8	0.8	0.8
Balances				
Total Gulf production	19.5	22.4	26.8	30.5
Total Gulf demand	3.3	3.8	4.3	5.0
Gulf exports	16.2	18.6	22.5	25.5
Destinations of Gulf Oil (mb/d;%)				
Asia (total exports)	9.5 (58.6 %)	11.7 (62.9 %)	15.5 (68.9 %)	18.8 (73.7 %)
OECD Europe	3.4 (21.0 %)	3.2 (17.2 %)	3.0 (13.3 %)	2.7 (10.6 %)
United States	1.6 (9.9 %)	1.3 (7.0 %)	1.0 (4.4 %)	0.5 (2.0 %)
Other destinations[a]	1.7 (10.5 %)	2.4 (12.9 %)	3.0 (13.3 %)	3.5 (13.7 %)

[a] Canada, Central and South America, Eastern Europe and the countries of the former Soviet Union.

Source: East-West Center data files, here following the article of Fereidun Fesharaki: Energy and the Asian Security Nexus. In: Journal of International Affairs, Autumn 1999, pp. 85–99 (90). The percentages have been added by the author.

China has undertaken unmistakable efforts to satisfy its energy demand by increasing exploitation of other energy sources, modernising its own production and extraction plants with the goal of increasing its own capacity, floating shares in Chinese oil companies on international stock exchanges and making global investments to secure foreign energy resources while at the same time diversifying imports of crude oil and natural gas. Nevertheless, these measures have only been partially successful, a cause of continued concern to the political leadership in Beijing.[51]

Moreover, seeing as the Asian region has made the increased use of natural gas a top priority for the next decades, the continent's high level of dependence upon imports of crude oil from the Persian Gulf will increase due to growing imports of natural gas from the region and from the Russian Far East. While natural gas pipelines are being constructed from Siberia and Sakhalin, it is more likely to be liquid gas that will be transported from the Middle East to Asia in

[51] See Martin Kühl: Financial Times Deutschland, 28.3.2002, p. 10.

tankers.

An analysis of Chinese "oil diplomacy," especially in the Middle East, reveals that while China is now more willing to participate in joint ventures with foreign energy companies to exploit both domestic resources as well as those in other countries and regions, it also seeks access to energy resources in countries where Western, and in particular U.S. companies, have a weaker presence. This is especially true of states that the United States classifies as "rogue states," such as Iran, Iraq, Yemen or Sudan. The foreign and security policy impact of China's increasing dependency on steadily rising imports of oil and gas, made itself felt as early as the 1990s in Beijing's policies toward Iran or Iraq (arms exports, Beijing's voting patterns in the UN Security Council). Both these nations are regarded by the USA as "rogue states," and are also suspected of developing long-range ballistic missiles and warheads that can be used with weapons of mass destruction. While Beijing's policies in the Gulf region have largely been characterised by pragmatism and caution since the 1990s,[52] China's policy of arms exports to this region[53] and strong reservations about the U.S' policy of "double containment" and non-proliferation due to increasing crude oil and natural gas imports to China could, in future, have a negative impact both on the regional stability of the Middle East and the Persian Gulf, and also place an additional strain upon bilateral relations between Beijing and Washington.[54]

This is all the truer because China's energy policies and "oil diplomacy" continue to give bilateral relations clear priority over multi-lateral strategies and solutions designed to safeguard its energy supply. However, at the start of the 21st century, these are utterly inadequate to deal with the countless challenges that the process of globalisation has created for international trade, regional conflict management or international efforts in the field of arms control policy and non-proliferation measures for weapons of mass destruction and sensitive dual-use technologies (including conventional weapon's systems). Such multi-lateral political strategies vis-à-vis the oil and gas producing nations of the Middle East are needed more than ever before and will, in future, be needed for the countries of Central Asia and the Caspian Basin. Both regions are confronted with countless internal and regional instabilities that could have a strong

---

52 See Jonathan Rynhold: China’s Cautious New Pragmatism in the Middle East. In: Survival, Autumn 1996, pp. 102–116.

53 See Bates Gill: Two Steps Forward, One Step Back: The Dynamics of Chinese non-Proliferation and Arms Control Policy-Making in an Era of Reform. In: David Lampton (Ed.): The Making of Chinese Foreign and Security Policy in the Era of Reform. Stanford 2001, pp. 257–288 and the data and discussion in Richard F. Grimmett: Conventional Arms Transfers to Developing Nations, 1993–2000. Washington D.C. (Congressional Research Service), p. 58, <www.fas.org/asmp/resources/govern/crs.2000.pdf>.

54 See John Calabrese: China and the Persian Gulf: Energy and Security: In: Middle East Journal, Summer 1998, pp. 351–366 and Amy Myers Jaffe/Steven W. Lewis: Beijing’s Oil Diplomacy, p. 122 ff.

negative impact on the reliability of regional and global energy supplies in the future. Beside, China could find itself exposed to growing political pressure from the oil and gas exporting states in the Middle East. This political pressure could result in either greater Chinese arms exports, including sensitive dual use goods and technologies, or to concessions by Beijing on other political issues that run counter to Western policies and long-term strategic interests. Chinese support for the Russian and French positions on UN sanctions and objections to military action against Iraq, Western policy toward Iran and problematic arms exports to this and other Gulf states (including ballistic missiles) in the 1990s have already demonstrated this problem.[55] In the case of North Korea, barter and counter-trade deals such as "oil for weapons," are the rule rather than the exception, while during the Iran-Iraq war China was a major exporter to the Persian Gulf states. On the other hand, while Chinese transactions of this kind declined significantly in the 1990s, as Beijing also supported the UN sanctions,[56] exports of Chinese ballistic missiles to the region continued. A solution to this problem is hardly likely to be found in the near future as, in practical terms, Chinese non-proliferation policy regarding ballistic missiles and other sensitive dual-use technologies, depends upon the quality and stability of its bilateral relationship with the USA and is also increasingly influenced by domestic particularist interests.

On the other hand, increasing political and economic interdependencies could have a number of positive effects on the basic structures of the international system and regional political stability in the Middle East. The long-term interest of the Chinese government in political stability in the region could therefore increase, in turn opening up greater possibilities of co-operation not only for bilateral U.S.-Chinese relations.[57] Expansion of its political and economic, military and military-technology relations with the Middle Eastern states will also give China an increasing degree of influence over them and strengthen Beijing's position at a global level (in the UN for example). At the same time, however, these energy and foreign policy dependencies are also a risk for Beijing as it will increasingly be unwillingly drawn into local or regional political conflicts, but without having a political influence comparable to that of the USA on the possible parties to the conflict.

A political "Islamic-Confucianist alliance," as a consequence of these economic and political interdependencies could call into question the Western dominated world order, but is rightly considered unlikely by most regional experts. At the same time, however, the Asia-Pacific states and the oil exporting nations of the Gulf region have not yet developed any multi-lateral mechanisms for the management of potential interruptions to energy supplies. As neither China nor most of the other ASEAN states have so far built up strategic oil reserves for such crises, they would be massively hit by even temporary and brief

---

55 See Amy Myers Jaffe/Steven W. Lewis: Beijing’s Oil Diplomacy, p. 115 f.

56 See Katsuhiko Suetsugu: Energy Markets and Power Politics, pp. 56–58.

57 See Robert A. Manning: The Asian Energy Predicament, p. 82.

interruptions to the supply of oil, and in the future, higher imports of natural gas.[58] Still, China and the other Asian states are slowly starting to reconsider in this direction, as NATO's Kosovo war in 1999 and even more so the events following the terrorist attacks in the USA on 11 September 2001 exposed their vulnerability to an oil shock caused by inadequate or completely blocked supplies of oil and gas.

The Increasing Security Policy Importance of Shipping Lanes and Dangerous Straits

Due to the steadily growing dependence of China, Japan and the other Asia-Pacific states upon supplies of crude oil from the Persian Gulf, international shipping lanes (Sea Lanes of Communications/SLOCs) through the Indian Ocean and critical straits (choke points such as the Malucca Straits) have assumed a new importance.[59] China's policy toward South Asia and Myanmar in particular, is said to be based not only on economic, but also on long-term security policy intentions to protect energy import routes from the Persian Gulf by military means. For that reason, the construction of military bases on the coast of Myanmar and the arming of the Burmese armed forces contributed significantly to the heightening of Indo-Chinese rivalry in the second half of the 1990s. In 1999, after the Kosovo conflict, the potential effect the vulnerability of these strategic shipping routes could have on Chinese energy supplies was repeatedly the subject of security policy debates in China and led to greater efforts to diversify energy imports from Russia and Central Asia. Since the end of the 1980s, the Chinese military has successfully instrumentalised the emerging energy dependency on the Persian Gulf as the legitimisation for an accelerated modernisation of naval forces. Chinese naval operations will no longer be limited to the South China Sea and the Taiwan Strait -[60] even if the Chinese navy will need at least one or two decades to build up a small deep water navy, which even in the long-term would hardly be a match for the U.S. Navy.

Another example of the impact on foreign and security policy of China's increasing dependence upon distant energy exporting countries is the acquisition of shares by state-owned Chinese shipping companies (such as the China Ocean Shipping Company/COSCO) in strategic ports located on the most important international shipping straits. These include the Malucca Straits (Port Klang and Singapore), the Panama Canal and the Suez Canal. These Chinese financial and business activities are viewed with distrust, especially in the USA, as companies such as COSCO are said to have close ties to the Chinese armed forces and

---

58 See John Calabrese: Introduction. In Gulf-Asia Energy Security, p. 9.

59 See Fereidun Fesharaki: Energy and Asian Security Nexus, p. 91.

60 Frank Umbach: Konflikt oder Kooperation, here p. 46 ff.

intelligence services.[61]

Central Asia and the Caspian Basin

Given this background and the potential vulnerability of shipping routes through the Indian Ocean to the U.S. Navy, but in future, to Indian and even Japanese naval forces as well, the Central Asian region has gained particular importance for Beijing as a strategic land bridge between the Middle East and the Persian Gulf and the People's Republic of China not only in general security policy terms, but in particular for energy policy reasons.[62] However, in the medium-term perspective of the next ten to fifteen years, ambitious Chinese plans for oil pipelines with a length of up to 11,000 kilometres from Central Asia to China's east coast with its large and prosperous urban centres are hardly economically feasible. On the contrary, the economically more interesting option is the construction of pipelines from Central Asia to Iran or the Persian Gulf, where Central Asian oil and gas could be loaded onto tankers. Swap deals would be even more profitable. Central Asian energy would be transported to the north of Iran in pipelines and used by Iran itself, while in return, Teheran would export the same amount of Iranian oil and natural gas from its production sites on the Persian Gulf to Asia so that both states could net-off the quantities of crude oil with one another. However, due to Washington's "double containment policy" this option is currently unavailable to China, India and other Asian states. At best, crude oil and natural gas from Central Asia could be transported from Central Asia to Georgia or Russia or the Black Sea, or in future, through Turkey to the Mediterranean in pipelines and then loaded into tankers. However, this alternative costs two to three times as much as a swap deal with Iran.[63]

Furthermore, Beijing cannot overlook the fact that due to socio-economic, ethnic and political instability in Central Asia and the Caspian Basin, ambitious pipeline plans and other large-scale infrastructure investments carry great political risks that have so far deterred a large number of foreign investors. Nevertheless, despite the massive expansion of co-operation with Russia in the field of energy, Beijing does not wish to become excessively dependent upon its large northern neighbour, as Beijing remembers all too well how after the break with China in the late 1950s, Moscow withdrew not only its nuclear weapons' engineers, but also its oil and energy experts and also ceased providing technical support, which at the time led to serious energy supply problems in China.

Owing to this dilemma, the Chinese government is now willing to provide substantial financial support for the construction of long and economically dubious pipelines and, despite its traditional distrust of Western energy

---

61 COSCO is the second largest shipping company in the world and according to the U.S. acts as the "merchant navy arm of the PLA". See From Singapore to Port Said: China’s Influence over the World’s Waterways. Stratfor.Com, 10.5.2000.

62 See Amy Myers Jaffe/Steven W. Lewis: Beijing’s Oil Diplomacy, p. 125 f.

63 See Fereidun Fesharaki: Energy and Asian Security Nexus, p. 94.

companies and previous focus on a policy of extensive autarky (designed to reduce economic and political dependencies and the vulnerability of shipping routes), to open up its own energy sector and at least isolated strategic energy projects, such as the construction of a 4,000 kilometre gas pipeline with a total cost volume of U.S.$ 18 billion, to foreign energy companies.[64] At the same time, however, as part of its diversification efforts, China has extended and increased its energy investments to Africa, despite the greater distances and frequently higher transport costs. China's geo-economic and geo-political interests also overlap here, although a large number of oil exporting African states such as Sudan, Angola, Chad and Nigeria face high levels of internal instability, that could lead to supply difficulties or even long-term disruptions to oil exports.[65]

Summary and Outlook

Although China made gradual progress toward deregulating its energy policies and integrating itself into the global economy in the 1990s, efforts to orient its energy industry to the needs of the market since 1998 have repeatedly faltered. Major energy policy decisions at the (state-run) energy corporations are still not made primarily, let alone solely, according to economic criteria, but by the Politburo in Beijing, where foreign and security policy factors frequently play a central role in energy policy decisions often to an unbalanced extent. Nevertheless, in the future, neither unilateral-national strategies nor increased armaments to secure energy import routes by land, and above all, by sea, will provide a solution that will ensure reliable supplies of energy for China. At the same time, however, China is hardly likely to entrust the U.S. Navy with the task of securing its energy imports over sea routes. At present, this dilemma appears almost insoluble to Beijing for domestic reasons. A long-term solution can only lie in the most international division of labour and multi-lateral policy (e.g. the creation of a regional strategic oil reserve), which meets the requirements of increasing globalisation and primary economic criteria and which promotes the opening up to outsiders, deregulation and privatisation of the Chinese energy sector. The international community can do much to help here, as such multi-lateral approaches to solving problems require a fundamentally co-operative foreign and security policy on the part of Beijing. China has since taken steps in this direction, but many more and far greater steps will have to follow.

It is also in the interest of the rest of the world that a solution is found to the problem of how to guarantee China's energy supply and other questions concerning energy resources, if negative global impacts on environmental and security policies are to be avoided. The safer China feels regarding the solution to its energy problems, the safer its neighbours and the rest of the world will be.

---

64 See South China Morning Post, 8.1.2002 (Internet Version).

65 See Amy Myers Jaffe/Steven W. Lewis: Beijing’s Oil Diplomacy, p. 127 f.

Whether the events of 11 September 2001 have really led to a fundamental reversal and qualitative reorientation in bilateral relations between the People's Republic and the USA may be doubted. Nevertheless, since those events, numerous areas of co-operation have been found that should not only benefit the USA, but also help the EU to shape and concretise its joint foreign and security policy and joint security and defence policy toward China and Asia. In its own strategic interest and because of its dependency upon energy from the Middle East and Persian Gulf that will increase in the future (as well as the related risks to European energy supplies), the EU should strive toward a strategic co-operation with China in all areas of energy policy and thus exercise a significant influence over China's co-operative energy and thus also foreign and security policies. However, this requires a knowledge, which is largely lacking in Europe, of the geo-economic and geo-political interdependencies of international energy policy, their impact on individual foreign and security policies as well as upon regional and global political stability.